

## ABSTRACT

A reliable, cost effective motion simulator system wherein a motion platform controlled by three inexpensive fractional horsepower induction AC motors to provide  $n$ -axis of motion where  $n$  is two, three, four, five or six. A dynamic boost is applied to maintain the position of the motion platform at low speed or zero speed and to handle transient motion demands without use of an encoder. The personal simulator motion base includes a support structure for positioning a rider coupled to the motion platform. A support pedestal and a plurality of linkages support the motion platform. A plurality of motor assemblies 114 is coupled to the motion plate by the linkages. A control algorithm enables the use of low cost power electronics to drive the AC motor-linkage assemblies. The personal simulator may be controlled in response to user-initiated commands, remote-user initiated commands or by commands embedded in game software or the audio track of a video stream.

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